

Description

[Insert title of invention]An Electronic Order Book with Security Rights

BACKGROUND OF INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a data processing system and method for managing broker transaction information and, more particularly, to a data processing system that helps to insure the requirements of the Securities and Exchange Commission (SEC) and other governing international, national, and regional bodies.

[0003] 2. Description of Prior Art

[0004] The Internet comprises a vast number of computers and computer networks that are interconnected through communication links. One use of the Internet is to search for information or to perform functions such as the buying and selling of stocks and securities.

[0005] The characteristics of a good Securities Market are the

following: the availability of past transaction information which is timely and accurate; liquidity, the ability to buy or sell an asset at a known price; marketability, the ability to buy/sell quickly; price continuity with no huge jumps in prices without new information; depth, a number of buyers and sellers present; low transaction cost, the lower the more efficient; and informational efficiency where prices adjust quickly to new information and reflect all available information.

- [0006] Daily trading volume of securities has increased from 5 million shares to over 420 million shares. The NYSE routinely handles volume over 400 million shares, and had a daily high of more than 700 million in 1998. Technology has allowed the market process to keep pace. Some of these technological advances are as follows:
- [0007] The Super DOT: Electronic order-routing system where member firms transmit market and limit orders in NYSE securities to trading posts or member firm's booth. The report of execution is returned electronically; 85% of NYSE market orders enter through Super DOT system.
- [0008] The Display Book: an electronic workstation that keeps track of all limit orders and incoming market orders, including incoming Super Dot limit orders.

- [0009] The Pre-opening Market Orders for Super Dot System: automatically and continuously pairs buy and sell orders. It presents imbalances to the specialist prior to the opening of a security, helps determine opening price and potential need for pre-opening call market
- [0010] The Market Order Processing: Super Dot's post-opening market order system. This allows for rapid execution and reporting of market orders
- [0011] Limit Order Processing: electronically files orders to be executed when and if a specific price is reached. This updates the Specialist's Display Book. Good-until-cancelled orders that are not executed are stored until executed or cancelled.
- [0012] There are certain major types of securities orders, such as:
- [0013] Market orders are buy or sell at the best current price and provide immediate liquidity.
- [0014] Limit orders are orders that specify the buy or sell price and have time specifications which may vary: Instantaneous – "fill or kill", part of a day, a full day, several days, a week, a month, or good until canceled (GTC)Securities.
- [0015] Short sales are the sell of overpriced securities that are not owned and are then purchased back later at a lower

price. The investor borrows the security from another investor (through a broker). It can only be made on an up-tick trade, must pay any dividends to lender and margin requirements apply.

- [0016] Special Orders are sells such as: Stop loss which is a conditional order to sell security if it drops to a given price but it does not guarantee price received upon sale and market disruptions can cancel such orders; and Stop buy orders in which an Investor who sold short may want to limit loss if security increases in price.
- [0017] Margin Transactions which are on any type order, wherein instead of paying 100% cash, an investor can borrow a portion of the transaction, using the security as collateral. The interest rate on margin credit may be below prime rate and Regulations limit proportion borrowed. Margin requirements (proportion of cash payment) are from 50% and up.
- [0018] Changes in security price affect investor's equity Various computerized systems for providing financial services and for facilitating financial transactions are known in the art. U.S. Pat. No. 6,304,858 issued on Oct. 16, 2001 to Mosler et al. discloses a computer-implemented system for trading in which a standardized contract is traded. The con-

tact obligates a buyer and a seller to settle the contract based on a price of the contract at a first effective date. The contract is traded through an exchange, and a price of the contract is determined from certain financial factors. U.S. Pat. No. 6,014,643 issued on Jan. 11, 2000 to Mosler et al. discloses an interactive securities trading system. Sellers and buyers of securities may transact through the system. Upon acceptance by a buyer of a seller's offer, the buyer's account is debited and the buyer receives title to the purchased securities.

- [0019] Published Street Name Trading was started in the 1950s to overcome the paper tiger of physical note trading for securities. Basically it means that only the brokerage name is transmitted and displayed in the order book. This creates problems in allowing regulators and others to see who the rights holder/ beneficial owner is. This can lead to fraud and manipulation.
- [0020] Through out the history of stock markets people have been attempting to manipulate for their own advances. The SEC, self-regulatory organizations ("SROs"), and state securities regulators have laws and regulations designed to prevent such manipulation. Most of the time regulators are investigating cases of fraud and manipulation months

if not years after it has occurred. This can make the gathering of proof very difficult.

- [0021] There exists a need to improve visibility for regulators, reducing fraud, thereby reducing risk and increasing liquidity. There is still need for improvement in the art.

SUMMARY OF INVENTION

- [0022] An embodiment of the present invention is an order book that actually displays the beneficial verified rights holder of the security being traded and is reconciled against a verification methods such as social security number, tax returns, passport number or international equivalent. The only existing electronic security order books are done with the "street name" of the firm trading the security. The actual rights holder cannot be tracked because there is no transparency (no ability to see past the brokerage firm). This leads to fraud and manipulation in securities market-places.

- [0023] The current invention provides significant improvement and adds value as it allows regulators to see who the rights holder/ beneficial owner is. This improves visibility for regulators, reducing fraud, thereby reducing risk and potentially increasing liquidity. It also potentially reduces the ability to conduct money laundering as trading is re-

port through appropriate tax authorities.

- [0024] The present invention is a system that will seek and identify fraudulent securities trading behavior for regulators. While existing systems cannot attempt this due to the blocked nature of "street name" trading, this highly transparent order book provides regulators a highly sophisticated set of tools to prevent, track, and prosecute fraud and manipulation.
- [0025] The present invention relates to a data processing system and method for managing broker transaction information in compliance with governmental regulations. The data processing system further provides for managing other types of broker transaction information such as client profiles, and for providing security measures which enhance the ability to prevent unauthorized trade activities.
- [0026] Some specific functional aspects of the data processing system of this invention include the ability to monitor and record any and all data changes made to previously entered trade records. This audit function prevents the changing of any trade record data without some record being made thereof in the main database. This is an additional security feature which further ensures that all data is entered and recorded, whether it be the entry of origi-

nal data for a trade transaction, or necessary changes which sometimes need to be made to trade data. A trade audit report may be generated which shows a change status with regard to each trade record.

- [0027] The data processing system and method of the invention results in a comprehensive means to assist broker/dealer representatives, local brokerage offices, and government regulators in dealing not only with SEC, national, international and regional rules, but to better record and track all operations of a brokerage.
- [0028] Other objectives and advantages of the present invention will become obvious to the reader and it is intended that these objectives and advantages are within the scope of the present invention.
- [0029] To accomplish the above and related objectives, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated.
- [0030] *Definitions:*
- [0031] Browser: a software program that runs on a client host and is used to request Web pages and other data from

server hosts. This data can be downloaded to the client's disk or displayed on the screen by the browser.

- [0032] Client host: a computer that requests Web pages from server hosts, and generally communicates through a browser program.
- [0033] Content provider: a person responsible for providing the information that makes up a collection of Web pages.
- [0034] Embedded client software programs: software programs that comprise part of a Web site and that get downloaded into, and executed by, the browser.
- [0035] Host: a computer that is connected to a network such as the Internet. Every host has a hostname (e.g., mypc.mycompany.com) and a numeric IP address (e.g., 123.104.35.12).
- [0036] HTML (HyperText Markup Language): the language used to author Web Pages. In its raw form, HTML looks like normal text, interspersed with formatting commands. A browser's primary function is to read and render HTML.
- [0037] HTTP (HyperText Transfer Protocol): protocol used between a browser and a Web server to exchange Web pages and other data over the Internet.
- [0038] HyperText: text annotated with links to other Web pages (e.g., HTML).

- [0039] IP (Internet Protocol): the communication protocol governing the Internet.
- [0040] SEC: the Security and Exchange Commission.
- [0041] Securities: For the purposes of this application, securities mean anything traded between parties such as 1. Games and fantasy shares 2. Predictive markets or collective probabilistic forecasting systems 3. Private equities and securities 4. Contracts 5. Points or rewards 6. Tax and legislative credits such as carbon credits 7. Rights such as mineral and timber rights 8. Royalty revenues or any other item that is actively traded.
- [0042] Shares: For the purposes of this application, shares means a unit or units of ownership interest in a security as defined above.
- [0043] Server host: a computer on the Internet that hands out Web pages through a Web server program.
- [0044] URL (Uniform Resource Locator): the address of a Web component or other data. The URL identifies the protocol used to communicate with the server host, the IP address of the server host, and the location of the requested data on the server host. For example, "<http://www.lucent.com/work.html>" specifies an HTTP connection with the server host www.lucent.com, from

which is requested the Web page (HTML file) work.html.

- [0045] UWU server: in connection with the present invention, a special Web server in charge of distributing statistics describing Web traffic.
- [0046] Visit: a series of requests to a fixed Web server by a single person (through a browser), occurring contiguously in time.
- [0047] Web master: the (typically technically trained) person in charge of keeping a host server and Web server program running.
- [0048] Web page: multimedia information on a Web site. A Web page is typically an HTML document comprising other Web components, such as images.
- [0049] Web server: a software program running on a server host, for handing out Web pages.
- [0050] Web site: a collection of Web pages residing on one or multiple server hosts and accessible through the same hostname (such as, for example, www.lucent.com).

BRIEF DESCRIPTION OF DRAWINGS

- [0051] Various other objects, features and attendant advantages of the present invention will become fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawings, in which

like reference characters designate the same or similar parts throughout the several views, and wherein:

- [0052] FIG 1 shows how a user would access the system;
- [0053] FIG 2 shows an overview of a typical securities order from a broker;
- [0054] Fig 3 shows an overview of how the current invention will show the actual buyer;
- [0055] Fig 4 displays the marker order book of the current invention;
- [0056] Fig 5 displays a sample portfolio screen of the current invention; and
- [0057] Fig 6 displays a sample of the flag of the current invention.

DETAILED DESCRIPTION

- [0058] The preferred embodiment of the invention is a method and process that results in a comprehensive means to assist broker/dealer representatives, local brokerage offices, and government regulators in dealing not only with SEC rules, national, international and regional, but to better record and track all operations of a brokerage. Other objects and embodiments of the invention, its nature and various advantages will be apparent to those skilled in the

art from the accompanying figures and the following detailed description of the invention.

- [0059] A computer application that includes the user interface for this invention will henceforth be referred to as "the System 1." FIG. 1 illustrates a functional diagram of a computer network for World Wide Web 500 access to the System 1 from a plurality of Users 10 who access the system Web Site 100 or the Users 10 can connect directly to the System 1. Accessing the System Web Site 100 can be accomplished directly through a communication means such as a direct connection, an intranet, a local Internet Service Provider, often referred to as ISPs, or through an on-line service provider like CompuServe, Prodigy, American Online, etc. or Wireless devices using services like AT&T or Verizon.
- [0060] The Clients 20 contact the System Web Site 100 using an informational processing system (Client) capable of running an HTML compliant Web browser such as Microsoft's Internet Explorer, Netscape Navigator, Lynx and Mosaic. A typical system that is used is a personal computer with an operating system such as Windows 95, 98 or ME, NT, 2000 or Linux, running a Web browser. The exact hardware configuration of computer used by the Clients 20,

the brand of operating system or the brand of Web browser configuration is unimportant to understand this present invention. Those skilled in the art can conclude that any HTML (Hyper Text Markup Language) compatible Web browser is within the true spirit of this invention and the scope of the claims.

- [0061] In one preferred embodiment of the invention, the Users 10 and/or Service Providers 20 connect to the System Web Site 100. In the preferred embodiment the system has numerous web pages. The information in the web pages are in HTML format via the HyperText Transport Protocol (http) and on Server System 310. The User 10 will use software to allow viewing of web pages, commonly referred to as a Web Browser, such as Communicator available from Netscape Communications Corp. or Internet Explorer available from Microsoft Corp. The user system is capable of accessing web pages located on Server System 310.
- [0062] Output can include a graphical user interface, hardcopy, facsimile, e-mail, messaging or other communication with any humanly or machine discernable data and/or artifacts. In some embodiments, output can include transmitting the risk variable related data to a designated recipient,

any humanly or machine discernable data and/or artifacts.

[0063] The data processing system 1 allows for secure input, data transfer and storage of a wide array of information. The input, data exchange and storage of the data is achieved by electronic data transmission, thus eliminating the need for paper logs. In a first embodiment of the invention, as further discussed below, means for processing data is provided which includes computer software installed at various locations within the data processing system. In a second embodiment of the invention, the data processing system has means for processing data which is installed on a web server computer; therefore, there is but one necessary installation of the means for processing data, and users log on to a website and conduct functions within the data processing system through the web server. The first embodiment can also be referred to as a Windows. TM. version, and the second embodiment can be referred to as a web browser version. The functionality of both embodiments is essentially the same; however, the second embodiment or the web browser version may incorporate some additional enhancements, as further discussed below. The data processing system in both embodiments utilizes a secure environment to trans-

mit all data through encryption/decryption. The data processing system further provides for an audit trail of modifications made to the recorded data. The data processing system 1 for both embodiments includes computer processing means for processing data, storage means for storing data on a storage medium, and communication means for transferring data in a secure environment.

- [0064] For the first embodiment on the Windows.TM. version, the data is entered on remote work stations and stored in local databases until the user performs a data transmission function which electronically transfers the data to a central database. The central database acts as a central repository enabling multiple off-site users to view and/or modify data, and generate reports or output. For the second embodiment or the web browser version, it can be conceptually broken down into two main components or groupings that allows the data processing system to achieve its functionality. They are as follows: (1) a main database that acts as the central repository for data entered into the system and (2) a means for processing data or computer software means in the form of coded computer instructions.

- [0065] For the web browser version, it is unnecessary to have the

different installations of the computer software because the web server computer has the entire means for processing loaded thereon. The user in the web browser version logs on to the website and then performs desired functions based upon functions made available to the type of user. There are two ways in which data is entered through the browser version: (1) through a website and transmitted via a LAN or the worldwide web to the web server. The web server then forwards the data to the database; or (2) through a data feed from a separate third party electronic online trading system and transmitted via a LAN or the worldwide web to the web server or an FTP server. The web server or FTP server then forwards the data to the main database. Transmission of data in the second embodiment via the worldwide web or LAN is also secure utilizing data encryption/decryption provided by SSL. Other than consolidation of the means for processing data at the web server computer, and the manner in which data is entered and retrieved through a website, the first and second embodiments have the same functionality, except for those additional features discussed below with respect to the second embodiment.

[0066] As shown in Fig. 2, currently a client 20 desires to buy or

sell a security. This is usually done through a broker 30. Current market books will only display the broker 30, so that regulators 40 and others 50 do not know who is behind the sale or purchase. This gives an opportunity to manipulate the market.

- [0067] As shown in Fig. 3, the current invention will display the actual client 20 as well as the broker 30. This will allow the regulators 40 and others 50 to see who is behind the transaction.
- [0068] Fig. 4 shows a tentative screen view of the current invention's Market Order Book 120. The Book 120 has the following fields.
- [0069] On bid orders there are the following fields; Security symbol, which is the symbol that signifies the stock or security being traded. Last Trade is the last trading price. Bid Price is the bid that the bidder is offering. Pieces is the number of shares or pieces of the security wanted. Trader is the actual beneficial rights holder of the transaction, not the broker.
- [0070] On ask orders there are the following fields; Security symbol, which is the symbol that signifies the stock or security being traded. Last Trade is the last trading price. Ask Price is the bid that the asker is wanting. Pieces is the

number of shares or pieces of the security wanted. Trader is the actual beneficial rights holder of the transaction, not the broker.

- [0071] The order book will use colors for the auction order book price display. Red will be used for downward prices for day, while green will be used for upward prices for the day.
- [0072] In the preferred embodiment, the order book has the actual rights holder, but it also have a place for the broker name/ symbol to and the broker house/symbol to be attached. The name of the rights holder 20, and the name of the broker 30, and the name of the broker house can be changed to 6 letter symbols for the reduction of space – for example:
 - [0073] Action Shares Security Holder Agent Firm
 - [0074] Buy 1000 GE FURR TEBRN ODBRUN
- [0075] This is an order for 1000 GE shares from Furr placed by his agent/broker Ted Brown, from the firm Odlum Brown.
- [0076] The system 1 will give users 10 the option to view the order book in "full name" or "symbols" mode. The advantage here is that regulators 40 and traders 20 are again given more visibility into fraudulent or manipulative transactions

that might be occurring within a firm – such as wash trading or high closing. This is shown below:

- [0077] Action Shares Security Holder Agent Firm
- [0078] Buy 1000 GE JEFFREY FURR TERRY BROWN Odlum Brown
- [0079] In the system 1, the trader is actual beneficial rights holder of the securities being traded, not the broker. The system verifies the identity of the beneficial rights hold by reconciling the identification against a verification method such as social security number, tax returns, passport number or international equivalent.
- [0080] Fig. 5 shows the Portfolio Summary Screen of the current invention. It has been designed to displace as much information as possible to make it as useful as possible for the User 10.
- [0081] It has the portfolio owner being listed in the upper right hand corner and it can have a ranking for comparison to other traders. There is a charting display, which charts how well the portfolio is doing. This charting can be for 1, 5 or 30 days or 1 year, 3 years or 5 years in the preferred embodiment. There is a pie chart that shows the percentages of each type of security represented in the portfolio. There is a display for the amount of cash and value of

stocks and/or other types of securities that make up the portfolio as well as displaying the total portfolio value, starting portfolio value and the amount of gain or loss. It displays the purchasing power of the portfolio, the daily trades limit and amount of trades remaining.

- [0082] The Portfolio Summary in the preferred embodiment will have the Equity Positions on the Portfolio displayed. This will include the Company name, the number of shares, the original cost of the shares, the average cost of the shares, the last quoted prices of the shares, the dollar change between the purchase price and quoted price, the percentage dollar change between the purchase price and the quoted price and the current value of the shares. This section will also have a buy/sell tab where a user 10 can click to either place an order for more shares or offer shares for sell.
- [0083] The system 1 will allow regulators 40 and others 50 to seek and identify fraudulent securities trading behavior. While existing systems cannot attempt this due to the blocked nature of "street name" trading this highly transparent order book allows regulators a highly sophisticated set of tools to prevent, track, and prosecute fraud and manipulation.

[0084] As shown in Fig. 6, the system 1 will use Regulator Transparency Flags 210. These flags 210 will be flagged if a transaction or a series of transactions are determined to be questionable. These flags will be transparent to the user 10 and/or clients 20. This will do much to track potential fraud and manipulation when it happens, whereas in the current environment it is usually investigated months or years after it occurs making it difficult for the regulators to gather information.

[0085] The system 1 will be written using programming languages, techniques and knowledge that is commonly known in the art.

[0086] *Alternative Embodiment*

[0087] The current invention can apply not to only securities but also to 1. Games and fantasy shares 2. Predictive markets or collective probabilistic forecasting systems 3. Private equities and securities 4. Contracts 5. Points or rewards 6. Tax and legislative credits such as carbon credits 7. Rights such as mineral and timber rights 8. Royalty revenues or any other item that is actively traded.

[0088] *Advantages*

[0089] The previously described version of the present invention

has many advantages. The system improves visibility for regulators, reducing fraud, thereby reducing risk and increasing liquidity.

- [0090] Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions are possible. Therefore, the point and scope of the appended claims should not be limited to the description of the preferred versions contained herein.
- [0091] As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.
- [0092] With respect to the above description, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

[0093] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.